

INRAE × Tokyo NODAI Joint Symposium on Fermentation and Food Bioscience

Host Organization: National Research Institute for Agriculture, Food and Environment (INRAE)
and Tokyo University of Agriculture (Tokyo NODAI)

Date and Time: Friday 5th June 2026

09:00 – 12:00 (French time)/16:00-19:00(Japan time)

Facilitator: Dr. Florent Chazarenc, INRAE

Dr. Yuji Yamamoto, Tokyo NODAI



Registration for online participation (Till 4th June): [Registration Form](#)

Program

09:00 – 09:10/16:00-16:10

Opening Remarks – Dr. Machito Mihara, Tokyo NODAI Vice President

09:10 – 09:20/16:10-16:20

Opening Remarks – Dr. Thierry Caquet, Vice-President of International Policy at INRAE

09:20 – 09:50/16:20-16:50

Dr. Shunichi Nakayama (Tokyo NODAI)

Professor, Laboratory of Fermentation Microbiology, Department of Fermentation Science,
Faculty of Applied Bioscience

[Details of a Researcher - NAKAYAMA Shunichi](#)

“What are the characteristics of sake yeast used in sake production?”

Japanese sake is an alcoholic beverage made from rice using microorganisms; the fungus *Aspergillus oryzae* saccharifies starch and produces glucose, and then the sake yeast *Saccharomyces cerevisiae* produces ethanol and aroma components from the released glucose. While there are many types of yeast, such as wine yeast and baker’s yeast, Japanese sake yeast shows excellent properties during sake brewing. Here, I would like to introduce some of the characteristics of Japanese sake yeast and shed light on the origins of these properties.

09:50 – 10:20/16:50-17:20

Dr. Patricia Lepage (INRAE)

Research Director, PhylHom Lab, Micalis Institute, INRAE Scientific Division for Human Nutrition and Food Safety

[PhylHom Lab](#) | [Lepage](#)

“Microbiome-driven strategies to preserve health and enhance treatment responses”

Through examples from inflammatory bowel diseases and cancer immunotherapy, this presentation will illustrate how variations in human microbiome diversity, composition, and function are associated with clinical outcomes, treatment efficacy, and immune-related adverse events. Particular emphasis will be placed on translational approaches aiming to move beyond observational studies toward mechanistic understanding. Emerging experimental workflows combining micro-bioreactors for culturomics, defined synthetic communities, and integrated meta-omics are opening new perspectives for functional validation and causal inference. Ultimately, targeted microbiome modulation through nutrition, next-generation probiotics, and fecal microbiota transplantation may represent promising and tailored levers for future preventive and therapeutic interventions.

10:20-10:30/17:20-17:30 Break

10:30 – 11:00/17:30-18:00

Dr. Ken Iwatsuki (Tokyo NODAI)

Professor, Laboratory of Molecular Bioregulation, Department of Nutritional Science and Food Safety, Faculty of Applied Bioscience

[Details of a Researcher - KEN IWATSUKI](#)

“Generation of mammalian taste cells and their application using organoid culture technology”

Japanese and French cuisines share a deep-rooted tradition of utilizing fermented foods. Japanese culinary culture cherishes a taste quality known as "umami," characteristically derived from fermented products such as miso and soy sauce — just as French cheese owes much of its flavor to fermentation. Umami is notable as the last of the five basic tastes to be formally identified, and unlike the others, its subtle and diffuse character makes it particularly challenging to analyze objectively.

Understanding the cellular and molecular basis of taste perception remains a fundamental challenge in sensory biology. Here we introduce an approach leveraging advanced organoid culture technology to generate mammalian taste cells in vitro, providing a platform for dissecting the mechanisms underlying taste sensation at the cellular and molecular level.

We aim to harness this taste organoid system to enable objective detection and characterization of umami, bridging fundamental sensory biology with applications in food science and nutritional health.

11:00 – 11:30/18:00-18:30

Dr. Julien Tap (INRAE)

Researcher, FME Lab, Micalis Institute, INRAE Scientific Division for Microbiology and the Food Chain

[Julien Tap | Food Microbial Ecology Lab](#)

“Next-Gen Fermented Food: Harnessing Gut Microbiome Diversity and Functions”

The gut microbiome is essential for human health, yet modulation requires more insight into inter-individual variation. Recent large cohort studies showed that environmental and host factors explain less than 20% of the variation in microbial composition, suggesting significant roles for stochastic factors and ecological rules in gut microbiome assembly. Although diet and lifestyle significantly influence the symbiosis between the host and microbiome, resilience is identified as a critical factor in maintaining the microbiome's structure throughout an individual's lifespan. This updated view of the human gut microbiome structural and functional landscape provides a conceptual framework for designing next-generation and sustainable fermented foods.

11:30 – 12:00/18:30-19:00

General Discussion

Closing remarks